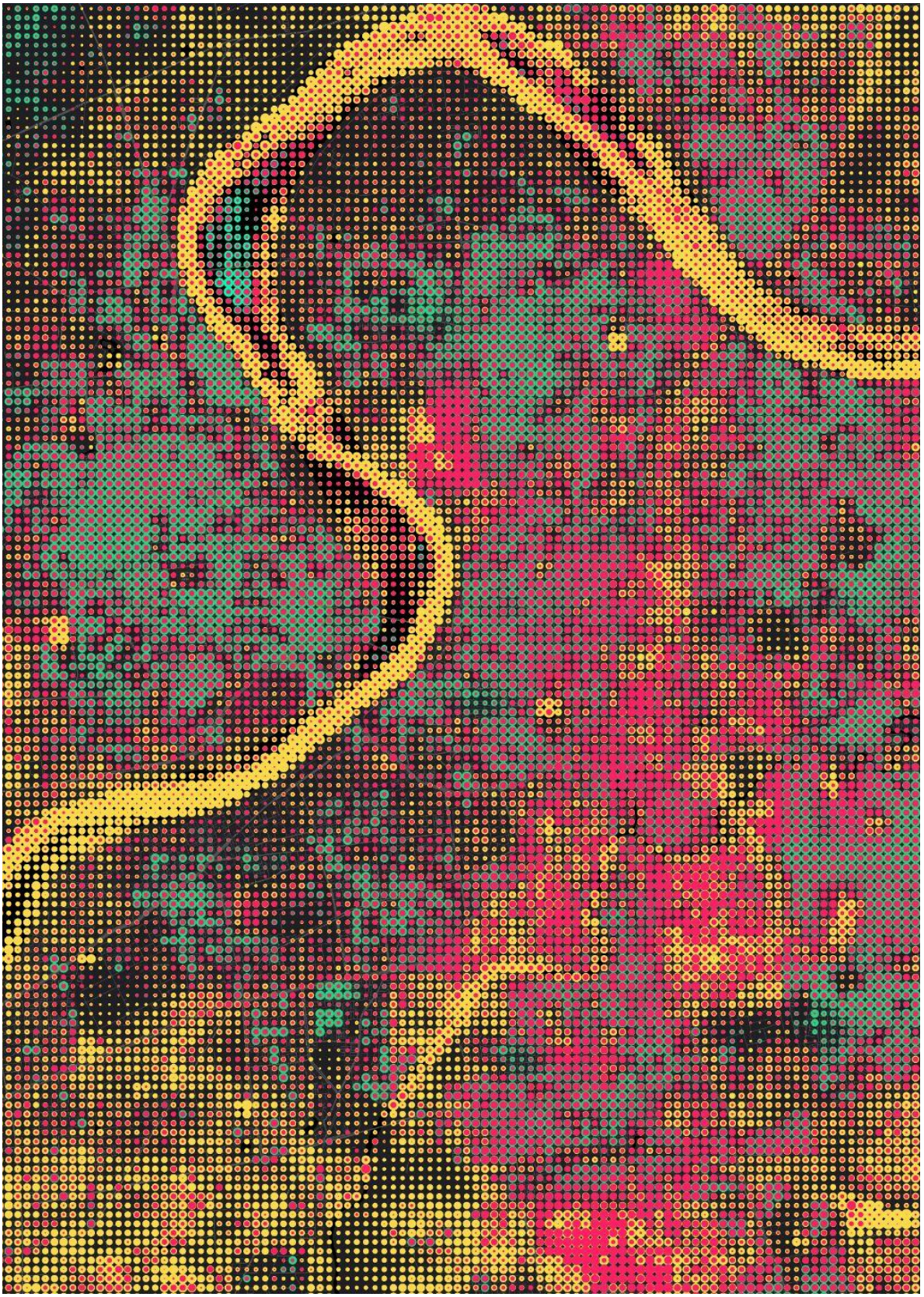
LEARN

APPLY

BUILD

SCALE



CITY.AI WORKSHOP!

EXPLORING URBAN 'ECOLOGICAL' LANDSCAPES THROUGH AI ANALYSIS.

WORKSHOP CURATORS: @ L.A.B.S.

@ L.A.B.S. is a multidisciplinary action-oriented urban laboratory promoting lifelong learning via transformative collaborations to explore new horizons, address real-world challenges and encourage experimentation in the realm of design and technology.

The L.A.B.S. model, an acronym for Learn, Apply, Build, Scale, embodies a dynamic approach to education and innovation. The ultimate goal is fostering a culture of continuous learning and real-world application. L.A.B.S. offers a structured pathway for individuals to evolve from learners to proactive contributors.

Tutors: Ar.Parshav Sheth | Ar.Yohan Wadia

AUDIENCE:

Beginners And Professionals Interested In Learning Artificial Intelligence And Machine Learning Models For Urban Scale Analyses ***[Bachelors, Masters and Faculty of Architecture].***

SOFTWARE:

Google Colab [Free And Available On Google Drive]
Image Segmentation | SAM: Segment Anything Model | OneFormer Model | K - Means Clustering

TIME:

8 HOURS

WORKSHOP BRIEF:

In our rapidly urbanizing world, cities are epicenters of growth, innovation, and diversity. Understanding the dynamic nature of urban ecology is crucial for effective urban planning, resource management, and sustainable development.

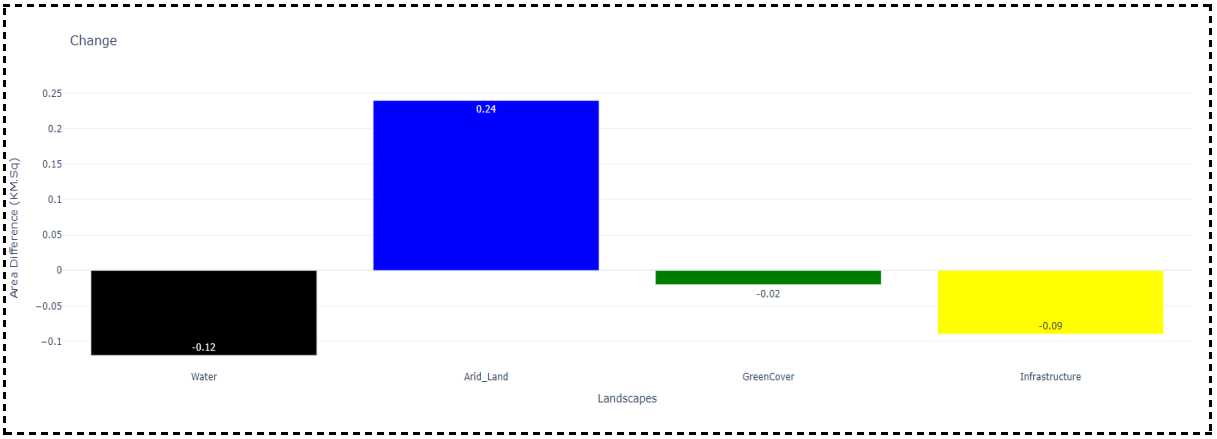
The CITY.AI workshop explores the big data frameworks of satellite imagery and curates a methodology for urban analysis empowered by artificial intelligence. Through the lens of Image segmentation AI models and advanced data scripting, we embark on a journey to explore ecology within cities from a unique perspective, uncovering decadal changes and patterns that shape our urban landscapes, to efficiently decode urban evolution, paving the way for data-informed decision-making.

CITY.AI aims to reimagine cities together, one pixel at a time.

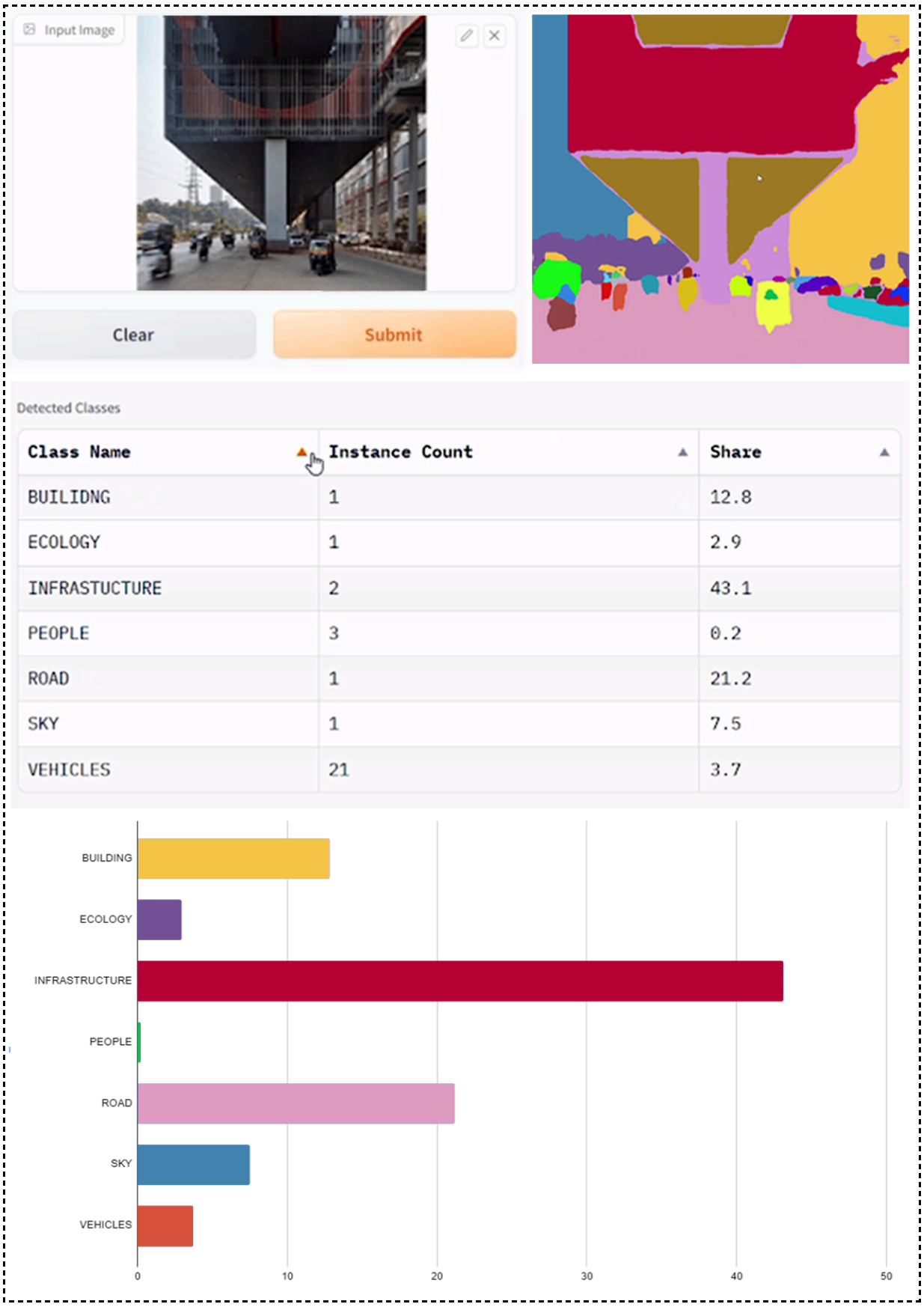
WORKSHOP OUTCOMES:

1. Satellite Imagery And Mapping With Google Earth Pro.

2. Analysing Decadal Changes through AI



3. Creating A Gradio Application: Analysing on ground Scenarios through AI



WORKSHOP STRUCTURE:

SR NO	@ L.A.B.S	MODULES	OBJECTIVES	ACTIVITY	TIME (MINUTES)
1	**LEARN: AI IN URBANISM**	**L1: AI, CITIES AND MACHINE LEARNING.**	Understand the dynamic value of AI in exploring our built environment	AI MIND MAP	30
			Recognize the need for efficient city-scale analysis		
			Understand the logic of machine learning.		
		L2: OPEN DATA BANKS	Familiarise with local and global big data archives.	AI IN CITIES [FLOWCHART]	30
			Explore State of the Art Cities and Projects.		
		L3: SATELLITE MAPPING AND DATA PROCESSING	Explore Google Earth Pro for mapping cities and changes	NEIGHBOURHOOD DATA SOURCING	30
			Explore pre-processing image segmentation models		
			Understand the logic of different types of Clustering		
2	**APPLY: AI MODELS**	**A1: INTRODUCTION TO GOOGLE COLAB & IMAGE SEGMENTATION**	Explore the Google Colab User Interface	SITE STUDY & EXPLORATION	30
			Understand object detection and Image Segmentation		
			Explore Segmentation via text prompts		
		A2: MACHINE LEARNING MODELS	Load and Segment Satellite Images	DATA SCRIPTING	30
			Create a slider to visualize decadal growth		
		A3: NEIGHBOURHOOD MAPPING	Create Segmented Images From Satellite Data	GROWTH MAPPING	30
			Learn the application of K-Means Clustering		

3	**BUILD: DYNAMIC ANALYSIS**	**B1: ANALYSIS**	Quantify segmented images for accurate measurement	QUANTIFICATION	30
			Change Visualisation		
		B2: CREATING INFOGRAPHICS	Quantify segmented images for accurate measurement	DESIGN INFOGRAPHICS	30
			Create bar charts and box plots to illustrate the results		
			Explore Infographics		
		B3: QUANTIFYING CHANGE	Create a slider showcasing decadal growth as segmented images	INSPECT NEIGHBOURHOOD	30
			Calculate the Percentage Change in Ecology and Infrastructure		
4	**SCALE: CITY.AI TOOL**	**S1: TRANSITIONING SCALES**	Explore Ground Reality Via Google Street Images	CREATE AN IMAGE ARCHIVE	30
			Explore the One Former Image Segmentation Model		
		S2: DATA STRUCTURING FOR APPLICATION	Understand the logic of platforming a tool	CREATE AN GRADIO APPLICATION	30
			Use the Gradio app to create a simple user interface		
			Create a platform with input and output based on AI processing		
		S3: GRADIO APP	Curate Reflections and Insights	TOWN HALL DISCUSSION	30
			Strategize on scaling AI technology for broader applications		
5	**DOCUMENTATION**	**D1: PORTFOLIO**	Create a portfolio using outputs from all modules and compile it into a template	CREATE A CITY.AI DOCUMENT	30

FACULTY:

Parshav Sheth is an Urban Strategy and Planning specialist, with expertise in settlement analyses of urban neighborhoods. He is dedicated to building multilateral stakeholder relationships that facilitate the development of circular policies, bridging the gap between rural and urban contexts.

With a background in Architecture from the Balwant Sheth School of Architecture and master's degrees from the Institute of Advanced Architecture for Catalonia, Spain Parshav possesses a strong academic foundation in research and education. His vision for sustainable urban transformation hinges on the strategic deployment of fast-scaling startup solutions in collaboration with established private, public, and civic entities.

Yohan Wadia is an Urban Planner and Geospatial Analyst specializing in resilience-building strategies for cities. His work tackles today's unpredictable urban environments, focusing on disaster management, ecology, and data-driven methods to assess a city's performance.

Yohan holds a degree in Architecture from Sarvajanik College of Engineering & Technology, Surat, and a master's degree from the Institute of Advanced Architecture for Catalonia, Spain. As a founding partner at HUE - Hub for Unique Endeavours, he leverages a strong foundation in research on planning and designing through data analytics, remote sensing, and AI while actively engaging in architectural practice. He aims to facilitate a transformation in cities, promoting sustainability through the thoughtful integration of technology and collaborative efforts.